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ABSTRACT

Results of a study to determine the effect of individually prescribed instruction (IPI) on the affective domain of elementary students are described. IPI is designed to maximize the school experience for each child by minimizing the instance of failure and giving the child control of the learning situation. Pupils, parents, and teachers from 18 elementary schools comprised the sample, totaling over 6,000 cases. Tests were administered to teachers and students in both control and experimental groups in grades three through six. In addition, parents of fourth and fifth grade pupils completed an opinionaire. Results relating to teacher attitudes indicated that IPI and control teachers do not have a significantly different perception of their teaching roles, their students, or the teacher-student relationship. Both groups reported highly positive attitudes in all three areas. However, the IPI teachers had a more positive perception of the teacher aide's role than the control teachers. Parents perceived IPI students as more highly motivated, self directed, and independent than non-IPI students. Middle level students (4th, 5th, 6th grades) had significantly higher scores on creative tendency, self-concept, and attitude toward school. For third grade students no significant difference existed on creative tendency. Control pupils had a higher attitude toward school while IPI students had a higher self-concept. The conclusion was that the effects of IPI are not felt at the lower grade level as much as the upper. (KC)

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A STUDY OF INDIVIDUALLY PRESCRIBED INSTRUCTION AND THE AFFECTIVE DOMAIN

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INTRODUCTION

The child's perception of himself as a worthwhile member of society is greatly affected by the school. As Coleman (1966) said of the child's social expectations, "...the direction such an attitude takes may be associated with the pupils' school experience as well as his experience in the larger community." The Individually Prescribed Instructional system is designed to maximize the school experience for each child by minimizing the instance of failure and giving the child control of the learning situation.

To a great extent, the school experience is marked by the pupils' success or failure. Bloom (1971) noted, "An individual develops a positive self-regard and a strong ego by continual evidence of his adequacy - - - especially in early childhood and in the periods of latency (ages 6-11) and adolescence. Since the school period (ages 6-18) occupies these latter two periods, we regard continual evidence of success or failure in the school as having major effects on the individual's mental health." He further stated, "There is considerable emipirical support for relating the individual's perception of this adequacy in school learning to the development of related interest, attitude, and self-concept."

Just as the child judges his adequacy in terms of success or failure, he also judges in terms of control. The worthwhile person is in control of his environment; less control means less self-worth. Anderson (1961) emphasized, "The use of power over a student is first an expression of lack of respect, or of confidence, in the person over whom it is used. It in turn becomes a source of anxiety in the student,

an inciter of defenses, and hence a degrading of quality of behavior of which the student is capable. The predicted outcome of this cultural domination is loss of 'motivation' and revolt, or conformity, submission and psychic atrophy."

Hutchinson (1963) found that highly creative pupils had only minimal opportunity to use their creative potential in the typical classroom. He showed that the teacher was the controlling factor and that the major questions were how she perceived the pupils and to whom she geared the instruction. Thus the pupil is an object of control rather than a source of control in the traditional classroom.

Vaughn (1969) took an extreme position:

> "One thing made clear by these random and often unrelated insights is that our traditional programs in education are effective instruments of our authoritarian society and antithetical to the development of creativity, and that they have been effective and efficient in producing quiet, orderly, and courteous children, rather than flexible, sensitive, and courageous individuals.
>
> If, indeed, our present need in education is to increase the quality of a student's knowledge, then the process by which a student comes to know becomes as important as the amount of knowledge gained. The emphasis in the educational process should be on the development of mature, sensitive, and responsible individuals."

However, there are reasonable guidelines which an innovative curriculum can incorporate to reinforce pupil success and yield control to the pupil. Hallman (1967) felt that the marks of the creative classroom are self-initiated learning, non-authoritarian environment, overlearning, divergent problem-solving, deferred teacher intervention and pupil self-evaluation. He discussed the concept that the pupils must learn to be sensitive and the teacher must be there to assist the pupil in coping.

The Individually Prescribed Instructional system incorporates the means for self-initiation, self-direction, and self-evaluation. The efforts of the child are not held up to comparison against the rest of the class nor against a "normal" curve. His opportunity to fail is thus minimized. The efforts of the child are under his own guidance rather than the control of the teacher or the pressure of his classmates. The marks of the creative classroom, as Hallman (1967) delineates them, are met. A logical outcome of this should be a more positive self-concept, creative tendency, and attitude toward school.

PROCEDURE

A. Sample

The sample was comprised of the pupils and teachers from 18 elementary schools. Nine of the schools were IPI schools and nine were control schools. There were 150 IPI teachers and 145 control teachers. There were 773 third grade pupils from the IPI schools and 660 third grade pupils from the control schools. In the IPI schools, 2,048 middle level pupils (grades 4, 5, and 6) were tested while 1,673 middle level pupils were tested in the control schools. In addition, 463 parents of 4th and 5th grade IPI pupils and 475 4th and 5th grade control parents were queried.

B. Method

The third, fourth, fifth, and sixth grades from 10 pairs of schools were tested at the end of the school year. Tests were administered to the pupils and teachers. In addition, parents of 4th and 5th grade pupils completed an opinionaire. The tests were scored and analyzed in Philadelphia by Research for Better Schools, Inc.

C. Instrumentation

1. Teacher Checklist

In assessing the affective domain of the teacher, we are asking what attitudes or emotional constraints are acting differently within the IPI class. To do this, we must reduce the classroom climate to its primary sources. This becomes five elements: (a) the teacher's perception of herself, (b) the teacher's perception of her pupils, (c) the teacher's perception of her interaction with her pupils,

(d) her perception of how the pupils are interacting among themselves, and (e) her perception of the aide who assists her. Combined, these five elements make up the teacher's perception of the classroom climate.

The form of the instrument itself is a semantic differential. There are five subtests totalling 51 items. The first subtest requires the teacher to depict her perception of her teaching role and is 17 items long. The second subtest requests her perception of her pupils and is 14 items long. The third subtest asks her perception of the teacher-pupil relationship in her class this year and is 8 items long. The fourth subtest assesses her perception of the pupil-to-pupil interaction and is 7 items long. The fifth subtest asks the perception of the teacher-aide's role and is 5 items long. The total test and each of the 5 subtests is scored.

2. Pupil Opinion Form

The Pupil Opinion Form is designed for pupils in grades 4 to 6 and contains 3 separate measures.

The first measure is a derivation of the Pennsylvania Assessment of Creative Tendency (Rookey, 1971). It assesses the pupil's attraction toward ego-risk and independence. The test is a 39 item Likert-style attitude inventory.

The second measure assesses the pupil's self-concept. It is derived from a matrix of three levels and four factors.

The three levels are the three vantage points of self-perception: (1) the self as viewed by the self, (2) the self as the self believes other perceive the self, and (3) the self as it compares to others.

The four factors are the sources of situation or the logical facets wherein the opportunity for appraisal are met: (1) the physical being, (2) the intellectual being, (3) the emotional being, and (4) social being. The test is a 24 item Likert-style attitude inventory.

The third measure is an 8 item Likert-style attitude inventory designed to assess the pupil's attitude toward his school. It is a self-report of perceived attraction of peers, teacher, and activities.

3. Early Pupil Form

The Early Pupil Form is a shortened version of the Pupil Opinion Form. The answer format is reduced from a 5 point continuum to a 3 point continuum. The creative tendency measure is 16 items long. The self-concept measure is 16 items long. The attitude toward school measure is 8 items long.

4. Parent Opinionaire

The Parent Opinionaire is a 20 item, 7 point Likert-style scale. It was designed to use the parent as an observer in assessing the development of behaviors that research indicates are related to motivation. It has been reported that these behaviors include self-direction, independence, perseverance, high tolerance of frustration, and good attitude toward school situations.

Directions to the parents stated that the only comparisons of interest were between age groups. No program comparisons were mentioned or implied.

RESULTS

A. Teacher Attitude:

The teacher's checklist generates six scales: (1) perception of role, (2) perception of pupils, (3) perception of teacher-pupil interaction, (4) perception of pupil-pupil interaction, (5) perception of teacher aide, and (6) a total teacher attitude score. The means and standard deviations of the total IPI and total Control groups are listed in Table One. The results of a T-test between the IPI and control means are also listed in Table One.

TABLE 1

MEANS, STANDARD DEVIATIONS, AND T
BETWEEN TOTAL IPI AND CONTROL TEACHERS

Scale	IPI: T	N	Mean	Standard Deviation	CONTROL: N	Mean	Standard Deviation
Role	0.1529	150	50.70	9.52	142	50.87	9.54
Pupils	1.2712	150	38.31	9.30	142	36.94	9.18
Teacher-pupil	0.1922	150	26.32	4.80	142	26.21	5.02
Pupil-pupil	1.2542	150	20.01	4.83	142	19.31	4.74
Aide	6.8280**	150	17.34	3.30	142	14.04	4.81
Teacher Attitude	1.8535	150	153.18	26.59	142	147.37	27.15

** Signicant beyond .01

As can be seen in Table One, the teachers' perception of the teaching role and the teacher-pupil interaction is almost identical in the total IPI and Control groups. The IPI teachers have a more positive total attitude, more positive perception of their pupils and the interaction among their pupils than the control teachers but not statistically significantly higher. The IPI teaches do have a statistically significantly more positive attitude toward their teacher-aides.

In tables two through nine, the teacher scales are presented by paired schools. In each table the n, mean, standard deviation and T are presented.

TABLE 2

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 0

Scale	IPI: T	N	Mean	Standard Deviation	CONTROL: N	Mean	Standard Deviation
Role	0.6007	21	49.10	9.65	15	51.07	8.42
Pupils	0.1025	21	37.29	8.86	15	37.60	6.81
Teacher-Pupil	0.5971	21	25.71	5.69	15	26.87	4.22
Pupil-pupil	4.2506**	21	15.86	3.47	15	20.73	4.88
Aide	4.4687**	21	15.86	3.47	15	10.67	4.12
Teacher Attitude	0.1415	21	148.33	29.01	15	146.93	22.64

** Significant beyond .01

There was no significant difference between the two schools shown in Table Two on attitude toward pupils, the teacher-pupil interaction, teacher role, or total attitude. The control teachers percieved the pupil to pupil interaction significantly more positively. The IPI teachers percieved the teacher aide role significantly more positively.

TABLE 3

COMPARISON BETWEEN IPI AND CONTROL SCHOOLS PAIR NUMBER 2

Scale	IPI T	N	Mean	Standard Deviation	CONTROL N	Mean	Standard Deviation
Role	0.4928	19	44.11	10.65	21	45.76	11.97
Pupils	0.3713	19	28.47	11.68	21	29.86	8.49
Teacher-pupil	0.2278	19	24.21	4.95	21	23.86	6.51
Pupil-pupil	0.0436	19	16.79	5.78	21	16.71	5.67
Aide	9.8862**	19	18.32	2.40	21	10.76	2.07
Teacher Attitude	0.4888	19	131.89	31.81	21	126.95	29.55

** Significant beyond .01

It can be seen in Table Three that the only significant difference in pair number 2, was a more positive attitude toward the teacher-aide by the IPI teacher.

TABLE 4

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 3

Scale	IPI				CONTROL		
	T	N	Mean	Standard Deviation	N	Mean	Standard Deviation
Role	1.1614	12	57.67	6.98	6	61.83	3.60
Pupils	1.1310	12	42.17	8.01	6	46.83	3.55
Teacher-Pupil	1.1180	12	28.08	3.92	6	30.33	1.97
Pupil-pupil	0.7046	12	21.75	6.17	6	24.00	0.89
Aide	0.3310	12	18.83	2.92	6	19.33	0.52
Teacher-Attitude	1.1989	12	168.50	22.35	6	182.33	7.03

There were no significant difference between the IPI and Control teachers in pair number 3 as shown on Table Four. The large difference in sample size between IPI and Control teachers indicates the need for caution in interpreting data concerning pair number 3 also.

TABLE 5

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 4

Scale	IPI T	N	Mean	Standard Deviation	CONTROL N	Mean	Standard Deviation
Role	0.7481	22	50.59	10.34	24	48.29	8.31
Pupils	1.3312	22	36.59	7.10	24	33.83	8.51
Teacher-pupil	2.4816*	22	27.05	4.56	24	23.71	4.49
Pupil-pupil	1.0843	22	19.86	4.45	24	18.42	3.08
Aide	1.6538	22	16.95	3.62	24	15.21	4.63
Teacher-Attitude	1.7690	22	151.05	22.18	24	139.46	21.45

* Significant beyond .05

As can be seen in Table Five, there was one significant difference in pair number 4. The IPI teachers had a significantly more positive perception of the teacher-pupil interaction in their classroom this year than the control teachers.

TABLE 6

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 5

Scale	IPI				CONTROL		
	T	N	Mean	Standard Deviation	N	Mean	Standard Deviation
Role	0.6085	12	48.58	9.68	12	51.00	8.88
Pupils	0.5171	12	36.25	7.52	12	37.83	7.93
Teacher-pupil	0.4339	12	27.08	5.55	12	26.08	4.21
Pupil-pupil	0.1202	12	18.33	5.07	12	18.08	4.78
Aide	2.9474*	12	18.00	3.79	12	13.75	6.11
Teacher Attitude	0.1641	12	148.25	22.88	12	146.75	28.15

* Significant beyond .05

The only significant difference in pair number 5 is a more positive attitude toward the teacher-aide by the IPI teachers.

TABLE 7

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 6

Scale	IPI				CONTROL		
	T	N	Mean	Standard Deviation	N	Mean	Standard Deviation
Role	2.3886*	12	46.50	8.03	20	53.65	5.70
Pupils	0.9887	12	37.17	6.81	20	39.55	7.67
Teacher-pupil	0.9278	12	26.17	5.11	20	27.95	2.93
Pupil-pupil	0.0754	12	20.67	4.29	20	20.55	3.39
Aide	0.0173	12	16.17	4.71	20	16.20	4.53
Teacher Attitude	1.2260	12	146.67	24.54	20	157.90	16.88

* Significant beyond .05

As shown in Table Seven, the only significant difference was a significantly more positive attitude toward their role held by the control teachers.

TABLE 8

COMPARISON BETWEEN IPI AND
CONTROL SCHOOLS PAIR NUMBER 8

Scale	IPI				CONTROL		
	T	N	Mean	Standard Deviation	N	Mean	Standard Deviation
Role	4.7497**	19	55.11	4.63	17	48.41	9.50
Pupils	2.7396**	19	43.79	5.39	17	39.00	7.75
Teacher-pupil	2.0104	19	28.05	2.84	17	26.24	4.82
Pupil-pupil	3.2049**	19	21.00	2.52	17	18.47	4.57
Aide	2.7440**	19	18.32	2.00	17	16.65	4.12
Teacher Attitude	4.6540**	19	166.26	12.46	17	148.76	26.47

** Significant beyond .01

As shown in Table Eight, the IPI teachers were higher on all six scores then the control teachers in school pair number 8. The IPI teachers were statistically significantly higher on all scales except the perception of the teacher-pupil interaction.

TABLE 9

COMPARISON BETWEEN IPI AND CONTROL SCHOOLS PAIR NUMBER 9

Scale	T	IPI n	IPI Mean	IPI Standard Deviation	Control n	Control Mean	Control Standard Deviation
Role	1.0290	17	55.59	6.72	22	53.45	10.33
Pupils	2.3364*	17	43.47	7.99	22	37.64	11.52
Teacher-Pupil	0.6703	17	28.06	4.56	22	27.09	5.71
Pupil-Pupil	0.6921	17	20.71	4.67	22	19.68	5.58
Aide	7.7337**	17	17.76	2.51	22	11.73	3.76
Teacher Attitude	2.1860*	17	165.59	23.12	22	149.59	29.65

** Significant beyond .01.

* Significant beyond .05.

The IPI teachers displayed a significantly more positive attitude toward their role, their aides, and overall teacher attitude as compared to the control teachers. Table 9 contains the data on school pair number 9.

B. Parents

The parent questionnaire was completed by 463 parents of IPI pupils and 475 parents of control pupils. The pupils were all from the fourth and fifth grades. For the total IPI and control groups, the IPI parent mean score was 103.68 and the control mean score was 98.66. A T-test between the means yielded a coefficient of 5.0225 which was significant beyond the .01 level.

The means of the parent questionnaire were also examined by school pairs. In Table 10a, the means, standard deviations, and T-test between school pairs is displayed.

TABLE 10a

PARENT QUESTIONNAIRE BY
PAIRED IPI AND CONTROL SCHOOLS

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	2.0448*	100.07	56	14.91	105.94	52	14.12
2	0.5678	98.16	44	17.84	96.17	63	16.88
3	2.1842*	104.15	34	12.43	97.43	30	16.60
4	1.3477	105.29	58	14.56	101.48	48	17.62
5	0.1998	103.14	44	15.27	102.53	57	17.03
6	1.3814	99.69	35	14.11	95.65	68	15.40
8	7.3471**	105.99	69	10.80	92.35	62	19.17
9	1.9447	102.97	64	11.99	98.91	66	16.07

* Significant beyond .05.

** Significant beyond .01.

As can be seen in Table 10a, there were three pairs with a significant difference between the means. In pair #0, the control group was significantly higher. In pairs 3 and 8, the IPI parents were significantly higher.

It may be noted from an examination of Table 10a that in every instance except one, school pair 0, the IPI school mean exceeds that of its comparison school. And, when school means are put in rank order across the 8 IPI and 8 comparison schools, IPI schools occupy eight of the top twelve ranks, as shown in Table 10b.

TABLE 10b

RANK OF SCHOOL MEANS ON
PARENT QUESTIONNAIRE

IPI	1,		3,	4,	5,	6,			9,	10,		12,				
CONTROL		2,					7,	8,			11,		13,	14,	15,	16

This, of course, is indicated and reported above in the T-test across school pairs.

C. Middle Level Pupils

The middle level pupils (4th, 5th, and 6th grade) were administered measures of creative tendency, self-concept, and attitude toward school. As can be seen in Table 11, the IPI pupils, as a total group, had significantly higher scores for all three measures than the control pupils.

TABLE 11

TOTAL GROUP MEAN SCORES FOR
IPI AND CONTROL MIDDLE LEVEL PUPILS

Attitude	T	IPI Mean	Control Mean
Creative Tendency	2.1538*	140.56	139.38
Self-Concept	4.1782**	79.97	78.47
Attitude Toward School	2.0430*	28.50	28.13

* Significant beyond .05.

** Significant beyond .01.

The attitude scores were also analyzed by paired schools. The results of the analyses are presented in Tables 12a, 12b, and 12c.

TABLE 12a

PAIRED SCHOOL COMPARISONS OF
CREATIVE TENDENCY SCORES

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	1.3396	141.79	249	15.06	143.53	270	14.56
2	0.9197	136.42	187	15.71	137.75	237	14.11
3	1.8058	143.03	114	16.23	137.63	40	16.46
4	7.3651**	139.60	257	14.77	129.59	215	14.90
5	1.6611	138.21	182	15.52	140.99	160	15.56
6	1.5922	142.56	147	14.34	140.11	232	14.77
8	0.3723	142.03	348	14.71	142.50	202	13.81
9	1.8340	139.07	248	15.71	141.67	227	15.20

** Significant beyond .01.

TABLE 12b

PAIRED SCHOOL COMPARISONS OF
ATTITUDE TOWARD SCHOOL SCORES

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	2.3306*	27.44	249	6.35	28.73	270	6.27
2	1.0204	27.12	187	6.08	27.70	237	5.63
3	1.9126	30.28	114	5.67	28.30	40	5.55
4	4.5902**	29.10	257	6.09	26.63	215	5.60
5	1.6401	29.35	182	6.21	28.31	160	5.50
6	1.9277	27.84	147	5.78	29.02	232	5.83
8	1.4964	28.54	348	6.05	29.33	202	5.96
9	0.5640	27.81	248	6.09	27.49	227	6.30

* Significant beyond .05.

** Significant beyond .01.

TABLE 12c

PAIRED SCHOOL COMPARISONS OF
SELF-CONCEPT SCORES

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	0.4111	80.61	249	12.94	81.07	270	12.57
2	0.0698	77.95	187	12.84	78.03	239	10.96
3	3.9860**	75.60	114	11.13	84.40	40	14.31
4	5.6182**	79.35	258	10.59	74.12	214	9.61
5	0.3588	79.80	182	12.42	79.33	161	11.86
6	0.1310	75.23	147	12.23	75.07	233	11.25
8	0.5269	80.74	348	12.22	80.20	202	10.68
9	0.0273	80.40	248	11.27	80.37	227	12.73

** Significant beyond .01.

The data in Tables 12a, 12b, and 12c indicates that in pair #4 the IPI pupils had significantly higher scores on all 3 attitudes. In pair #0, the control pupils had a significantly higher attitude toward school. In pair #3, the control pupils had a significantly higher self-concept; however, the data on pair #3 must be considered cautiously due to the disparity in IPI and control group size.

D. Early Level Pupils

The early level pupils (3rd grade) were administered measures of creative tendency, self-concept, and attitude toward school. As can be seen in Table 13, there were two significant differences between the total IPI and total control group means. The control group pupils had a significantly higher attitude toward school. The IPI pupils had a significantly higher self-concept.

TABLE 13

TOTAL GROUP MEAN SCORES FOR
IPI AND CONTROL EARLY LEVEL PUPILS

Attitude	T	IPI Mean	Control Mean
Creative Tendency	1.0128	36.07	36.29
Self-Concept	2.0000*	18.71	19.09
Attitude Toward School	2.4066*	36.16	35.38

* Significant beyond .05.

The early level pupil data were also analyzed by paired schools. The means, standard deviations, sample sizes, and T score between means is displayed in Tables 14a, 14b, and 14c.

TABLE 14a

PAIRED SCHOOL COMPARISONS OF
EARLY LEVEL PUPIL CREATIVE TENDENCY

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	0.3591	37.38	77	4.30	37.16	91	3.67
2	0.8555	34.95	66	3.37	34.42	64	3.70
3	2.0874*	36.06	67	4.31	33.75	20	4.46
4	2.9594**	33.24	90	4.64	34.86	104	3.59
5	1.2359	36.35	111	4.35	37.15	73	4.24
6	0.4326	36.65	62	4.12	36.38	86	3.46
8	0.4246	36.48	117	4.08	36.69	118	3.51
9	1.1355	36.21	73	4.31	37.02	81	4.54

* Significant beyond .05.

** Significant beyond .01.

TABLE 14b

PAIRED SCHOOL COMPARISONS OF
EARLY LEVEL PUPIL ATTITUDE TOWARD SCHOOL

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	0.1159	19.71	77	3.43	19.77	91	3.29
2	1.0888	18.92	66	3.33	18.22	64	3.99
3	0.1116	18.66	67	4.04	18.55	20	3.19
4	1.6396	16.83	90	3.72	17.71	104	3.74
5	1.9896*	19.60	111	3.25	20.56	73	3.15
6	3.8096**	17.68	62	3.68	19.81	86	3.11
8	1.0606	19.68	117	3.42	19.25	118	2.79
9	1.5163	17.60	73	4.17	18.56	81	3.71

* Significant beyond .05.

** Significant beyond .01.

TABLE 14c

PAIRED SCHOOL COMPARISONS OF
EARLY LEVEL PUPIL SELF-CONCEPT

		IPI			Control		
Pair #	T	Mean	n	Standard Deviation	Mean	n	Standard Deviation
0	0.4416	36.82	77	5.67	37.21	91	5.77
2	1.3336	38.77	66	5.55	37.28	64	7.13
3	0.8677	36.84	67	6.28	35.45	20	5.70
4	1.4071	36.12	90	5.34	37.20	104	5.73
5	3.5938**	38.07	111	6.03	34.81	73	5.51
6	1.6593	31.10	62	6.81	32.99	86	4.19
8	2.4555*	36.66	117	6.57	34.56	118	5.43
9	2.1568*	36.05	73	5.49	34.15	81	6.56

* Significant beyond .05.

** Significant beyond .01.

The three significantly higher means in early pupil self-concept were all in favor of IPI pupil scores. The two significantly higher means in early pupil attitude toward school were both in favor of control pupil scores. There was one pair of schools where the IPI was significantly higher and one pair where the control was significantly higher in creative tendency.

E. Instrument Reliability

The teacher, parent, and pupil instruments were assessed for reliability using the alpha coefficient procedures. The coefficients displayed in Table 15 are all satisfactorily high. The total test and subtests of the Teacher Checklist are particularly satisfying. The lower coefficient of the creative tendency measure (third grade form) is expected, given the behavior of that young a group, the complex nature of the attitude, and the brevity of the measure.

TABLE 15

RELIABILITY COEFFICIENTS OF
ATTITUDE MEASURES

Measure	Sample Size	Alpha Coefficient
Teacher Subtest - Role	150	0.9024
Teacher Subtest - Pupils	150	0.9347
Teacher Subtest - Teacher to Pupil	150	0.9094
Teacher Subtest - Pupil to Pupil	150	0.8854
Teacher Subtest - Aide	150	0.8963
Teacher Attitude Checklist	150	0.9645
Parent Opinionaire	478	0.8188
Middle Level - Creative Tendency	2048	0.7807
Middle Level - Attitude Toward School	2048	0.7701
Middle Level - Self-Concept	2048	0.8316
Early Level - Creative Tendency	773	0.4491
Early Level - Attitude Toward School	773	0.8022
Early Level - Self-Concept	773	0.6932

DISCUSSION

A. Teacher Attitudes

The IPI and control teachers did not have a significantly different perception of their teaching roles. The IPI teachers had a mean score of 50.70 with a standard deviation of 9.52. The control teachers had a mean score of 50.87 with a standard deviation of 9.54. The T-test between the means yielded a 0.1529 which is obviously not significant.

Since the measure is of the semantic differential style, it is possible to use the items to depict the respondents. Both groups were very positive about their role as being happy, valuable, satisfying, needed, strong, effective, productive, involved, and meaningful. Both groups were positive about their role as being professionally recognized, acting as a resource, autonomous, content, a helper, and instructional not clerical. Also, both groups were slightly negative toward their role as being rushed rather than having adequate time.

The IPI and control teachers did not have a significantly different attitude toward their pupils. The IPI teachers had a mean score of 38.31 with a standard deviation of 9.30. The control teachers had a mean score of 36.94 with a standard deviation of 9.18. The T-test between the means yielded a 1.2712 which is not significant.

Considering the items, both control and IPI teachers had a very positive attitude toward their pupils as happy and liking school. They were both positive about their pupils as being confident, eager, excited, self-controlled, content, dependable, resourceful, persistent, productive, and as thinking critically. The IPI teachers had two notably more positive responses than the control in terms of pupils being independent and self-directed.

The IPI and control teachers did not have a significantly different perception of the teacher-pupil relationship as shown by a non-significant T-test of 0.1922. The IPI mean was 26.32 with a standard deviation of 4.80. The control mean was 26.21 with a standard deviation of 5.02.

Both IPI and control teachers had a very positive attitude depicting the teacher-pupil relationship as active, strong, productive, pleasant, valuable, interesting, adequate, and satisfying.

There was no significant difference (T = 1.2542) between the control and IPI teachers' perception of the pupil to pupil interaction. The IPI teachers had a mean score of 20.01 with a standard deviation of 4.83 and the control teachers had a mean score of 19.31 with a standard deviation of 4.74.

Both groups had a positive perception depicted as cooperative, competitive, pleasant, productive, peaceful, helpful, and kind.

The IPI teachers did have a significantly more positive perception of the teacher aide's role than the control teachers (T = 6.8280). The IPI teacher mean score was 17.34 with a standard deviation of 3.30 while the control teacher mean score was 14.04 with a standard deviation of 4.81.

The IPI teachers were more inclined to depict the aide's role as productive, necessary, active, valuable, and desirable.

B. Parents

Analysis of the responses to the Parent Opinionaire showed a highly significant difference between IPI and non-IPI pupils as reported by the parent groups. The IPI mean score was 103.68 and the control mean score was 98.66. The T of 5.0225 was significant beyond the .01 level.

If, as the analysis indicates, IPI pupils are more highly motivated, more self-directed, and more independent than non-IPI pupils, then it would seem that IPI does indeed have important educational effects other than those more commonly measured in assessing program effects. The responses from the parent groups are substantiated by the very positive responses from IPI teachers on items concerning the independence and self-direction of pupils. (See discussion of Teacher Attitudes.)

C. Middle Level Pupils

The IPI pupils had significantly higher scores on all three affective measures than the control pupils. The three measures were creative tendency, self-concept, and attitude toward school.

The data support the hypothesis that Individually Prescribed Instruction has a positive effect on pupil self-concept. The IPI curriculum would be expected to have this effect since its primary aspects are a rejection of student-failure and a shifting of the locus of control from the teacher to the pupil. The pupil who does not fail is not required to integrate the trauma of a normative sociopolitical system with his image of self-worth. Likewise, the pupil who has the options and responsibilities of choice both on the temporal and spatial axes

is able to judge his social role in the same terms as he judges the roles of his adult models.

The data also support the hypothesis that Individually Prescribed Instruction has a supportive effect on pupil creative tendency. Given that creative tendency is best explained as a willingness to risk ego and a desire to direct oneself, it follows that IPI would be supportive. The IPI configuration allows the pupil to question without facing peer pressure and without being penalized for deviating from the temporal algorithm of a teacher's weekly lesson plan.

The finding that IPI pupils have a significantly higher attitude toward school is also not surprising. The reduction of a person to a number is a degrading experience. Fortunately, the IPI system allows a pupil to be a unique individual who in turn comes to appreciate rather than deprecate the learning situation.

D. Early Level Pupils

There was no significant difference between control and IPI pupils on creative tendency at third grade. The control pupils had a significantly higher attitude toward school. The IPI pupils had a higher self-concept.

It would seem that the effects of IPI are not felt at the lower grade level as much as the upper. It could further be hypothesized that the scholastic rigors of IPI make it less attractive to children than a normal classroom system.

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